UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE PREVENTION,
PESTICIDES AND TOXIC SUBSTANCES

MEMORANDUM **January 31, 2009**

SUBJECT: Summary of Ecotoxicity Data for Garlic Oil (*Allium sativum*) for the Registration Review Decision Document.

EPA Reg No.: 47319-4
Registration Review Case#: 4007
CAS No.: 8000-78-0
PC Code: 128827

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ACTION REQUESTED

The following is a preliminary ecotoxicity assessment for Garlic Oil (*Allium sativum*) in order to support of the Registration Review Work Plan.

RECOMMENDATIONS AND CONCLUSIONS

Executive Summary

Based on the available information for Garlic Oil, the Agency does not foresee the need for additional ecotoxicity data for a new risk assessment. EPA has waived all hazard and exposure data on this chemical. The unique characteristics of this product, it's non-toxic mode of action, and biodegradability (low to no persistence) should minimize the risks to all non-targets, including threatened and endangered species.

I. Background

Garlic is the fresh or dehydrated bulb or cloves obtained from *Allium sativum*. The proposed active ingredient is either a powder or a distilled extract from garlic cloves and is used as a bird and insect repellent on various crops that include fruit, nut and citrus trees, vegetables, vine crops, berries, grains, roses, flowers, and shrubs. The Agency believes that there is a category of pesticide active ingredients for which a broadly reduced data set is sometimes warranted. In considering garlic oil, the Agency considers this compound as eligible for this broad waiver of the generic data requirements pertaining to ecotoxicity and fate. The conclusions that have led to this decision include the following:
1) Garlic is widely distributed and commercially available in the food industry for flavoring and seasoning.
2) Garlic is generally recognized as safe (GRAS) under 21 CFR 182.10 (spices and natural seasoning) and 182.20 (essential oils, oleoresins, and natural extractives).
3) Garlic (powder or distilled extract) is used as a bird and insect repellent on various crops, orchards, and ornamentals. The active ingredient has a non-toxic mode of action for target pests.
4) Garlic extract appears to be non-persistent in the environment.
5) No adverse effects reports have been submitted to the Agency regarding garlic toxicity to humans or the environment.

II. Ecotoxicity Profile

Avian Toxicity Studies

The unique characteristics of this product, it's non-toxic mode of action, and biodegradability (low to no persistence) should minimize the risks to all avian species.
Data Waived.

Fish Toxicity Studies

The unique characteristics of this product are that it has a non-toxic mode of action, and biodegradability (low to no persistence) should minimize the risks to all fish species. **Data Waived.**

Aquatic Invertebrate Toxicity Studies

The unique characteristics of this product are that it has a non-toxic mode of action, and biodegradability (low to no persistence) should minimize the risks to all aquatic invertebrate species. **Data Waived.**

Endangered Species

The unique characteristics of this product are that it has a non-toxic mode of action, and biodegradability (low to no persistence) should minimize the risks to all endangered species. **No Effect**